



## MAUL FOSTER ALONGI

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February 13, 2009  
Project No. 8128.01.20

Mr. Dana Bayuk  
Oregon Department of Environmental Quality  
2020 SW 4<sup>th</sup> Avenue  
Portland, Oregon

Re: Proposed Reduction in Quarterly Monitoring Program Scope – Siltronic Corporation

Dear Mr. Bayuk:

The following letter includes a recommendation to reduce the scope of quarterly groundwater monitoring at the Siltronic Corporation (Siltronic) facility. Eight monitoring wells have been identified as potentially redundant, and discontinuing quarterly sampling at these wells will facilitate data collection efforts focused on the enhanced in-situ bioremediation (EIB) Source Control Measure (SCM). The recommendation to remove these well is based upon the quarterly data collected to date, which are included in this letter.

### BACKGROUND

The existing quarterly groundwater monitoring well network was designed to provide data regarding the nature and extent of trichloroethene (TCE) and its degradation products (specifically, cis-1,2-DCE and its isomers, and vinyl chloride). Wells were located upgradient, within, and cross-gradient of the plume of these chlorinated volatile organic compounds (CVOCs). The analytical scope included not only CVOCs but also other analytes to evaluate the effects of naturally-occurring attenuation of the CVOCs. The nature and extent of the CVOc plume<sup>1</sup> and natural attenuation parameters are well-characterized, as described in the RI Report (MFA, 2007).

The wells proposed for removal are either outside the lateral or vertical extent of the plume, or have been rendered redundant by additional wells that have been added to the network. The proposed wells are shown on the attached figure. The following sections describe the quarterly data collected to date from the wells proposed for discontinuation, and the rationale for discontinuing quarterly monitoring.

<sup>1</sup> In this document, CVOc plume specifically refers to the upland plume of TCE, DCE isomers, and vinyl chloride resulting from a release or releases in the former TCE handling and storage area adjacent to the Fab 1 building.

#### WS-10-27

WS-10-27 is located approximately 300 feet upgradient of the former TCE UST area and the CVOC plume. Quarterly monitoring results from this well have been below 6 ug/l for DCE, TCE, and VC since February 2006 (See Figure 2). In the last 8 sampling events, only 2 samples detected DCE or TCE, and VC was not detected. Based on the location of the well and the data, this well does not provide continuing information about the nature and extent of the CVOC plume.

#### WS-11-161

WS11-161 is located within the lateral footprint of the CVOC plume, but is screened below the lower vertical extent of the CVOC plume. Twenty samples have been collected at this well since 2003 and 75%, 85%, and 90% of samples have been below detection limits for DCE, TCE, and VC, respectively (See Figure 3). In the last four quarters of sampling, DCE and VC have not been detected, and only one sample detected TCE (0.81 ug/l). Based on this elevation of the screen and the data, this well does not provide continuing information about the nature and extent of the CVOC plume.

#### WS-12-161

WS12-161 is located within the lateral footprint of the CVOC plume, but is screened below the lower vertical extent of the CVOC plume. Since 2003, twenty samples have been collected at this well and only six have detected DCE, and four have detected TCE or VC (See Figure 4). In the last three quarters, DCE has been detected once (0.35 ug/l), TCE has been detected once (0.58 ug/l), and VC has been below detection limits. Based on the elevation of the screen and the consistently low concentrations, this well does not provide continuing information about the nature and extent of the CVOC plume.

#### WS-14-161

WS14-161 is located within the lateral footprint of the CVOC plume, but is screened below the lower vertical extent of the CVOC plume. Since 2004, nineteen groundwater samples have been collected at this well. VC has not been detected at this well, and DCE and TCE have been detected one and three times, respectively (See Figure 5). The highest DCE concentration was 0.33 ug/l. The highest TCE concentration was 2.71 ug/l. Based on the elevation of the screen and the consistently low concentrations, this well does not provide continuing information about the nature and extent of the CVOC plume.

#### WS-15-140

WS15-140 is located within the lateral footprint of the CVOC plume, but is screened below the lower vertical extent. As shown on the attached Figure 6, DCE concentrations have been below 7 ug/l for the last five quarters. TCE concentrations have been below 2 ug/l for the last five quarters and have been below detection limits for 44% of all samples collected at this well. VC concentrations have been below 2 ug/l for the last four quarters and have been below detection limits for 39% of all samples collected at this well.

The data from this well are somewhat different from the other wells located within the lateral footprint, but below the lower vertical extent, in that during 2005 and 2006 concentrations of TCE and DCE were briefly elevated relative to earlier and subsequent data. The reason for this temporary elevation is unknown but likely reflects the heterogeneity of the distribution of TCE and its degradation products in and near the former TCE handling and storage area. The presence of DCE in the samples confirms that natural dechlorination of TCE is occurring and could explain the decrease in concentrations. Based on the data, this well does not provide continuing information about the nature and extent of the CVOC plume.

#### WS-16-125

WS16-125 is located outside the lateral extents of the plume. Groundwater samples have been collected quarterly at this well since 2004 and DCE, TCE, and VC concentrations have been below detection levels for 88%, 82%, and 82% of all samples, respectively (See Figure 6). DCE has not been detected since November 2006. TCE has only been detected once (0.73 ug/l) since May 2006. VC has only been detected once (0.57 ug/l) since November 2006. Based on these consistently low measurements, this well does not provide continuing information about the nature and extent of the CVOC plume.

#### WS-16-161

WS-16-161 is located outside the lateral extents of the plume. Since 2004, seventeen groundwater samples have been collected at this well (See Figure 7). DCE and VC have not been detected in any of the samples. TCE has been detected in only three samples, and the highest level was 1.24 ug/l. Based on these consistently low measurements, this well does not provide continuing information about the nature and extent of the CVOC plume.

#### WS-17-52

WS17-52 is located upgradient of the of the CVOC plume. Since 2004, seventeen groundwater samples have been collected at this well (See Figure 8). DCE and VC were not detected in any of the samples. TCE was detected in two samples, and the highest level was

0.68 ug/l. Based on the location of the well and the data, this well does not provide continuing information about the nature and extent of the CVOC plume.

#### WS-17-94


WS17-94 is located upgradient of the CVOC plume. Groundwater samples have been collected quarterly at this well since 2004 and DCE, TCE, and VC concentrations have been below detection levels for 88%, 71%, and 94% of all samples, respectively (See Figure 9). DCE has not been detected since August 2007. TCE was detected once (0.49 ug/l) since November 2007. VC has not been detected since August 2006. Based on the data, this well does not provide continuing information about the nature and extent of the CVOC plume.

The attached table summarizes the proposed wells, construction details, and data supporting the rationale for discontinuing monitoring. MFA will continue to collect monthly groundwater elevations from these wells consistent with the current monitoring program. MFA notes that CVOC concentrations in wells WS-14-161, WS-11-161, and WS-12-161 may change as a result of groundwater extraction by NW Natural (NWN). The need to resume CVOC sampling at these wells can be re-evaluated when the design of the system and monitoring requirements are further developed by NWN and DEQ.


We look forward to DEQ's review and comment regarding this proposal, and recommend delaying the quarterly monitoring event scheduled for February, 2009 pending DEQ's decision.

Sincerely,

Maul Foster & Alongi, Inc.



James G.D. Peale, RG  
Senior Hydrogeologist



Ted Wall, PE  
Principal Engineer

Attachments: Figures  
Table

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cc: Tom McCue, Siltronic Corporation  
Alan Gladstone, Davis Rothwell Earle and Xochihua  
Chris Reive, Jordan Schrader Ramis  
Jim Anderson, DEQ  
Kristine Koch, EPA  
Sean Sheldrake, EPA Seattle  
Rene Fuentes, EPA Seattle  
Eric Blischke, EPA Portland  
Chip Humphrey, EPA Portland

# FIGURES









Figure 2 - WS10-27  
CVOCs in Groundwater  
Siltronic Corporation

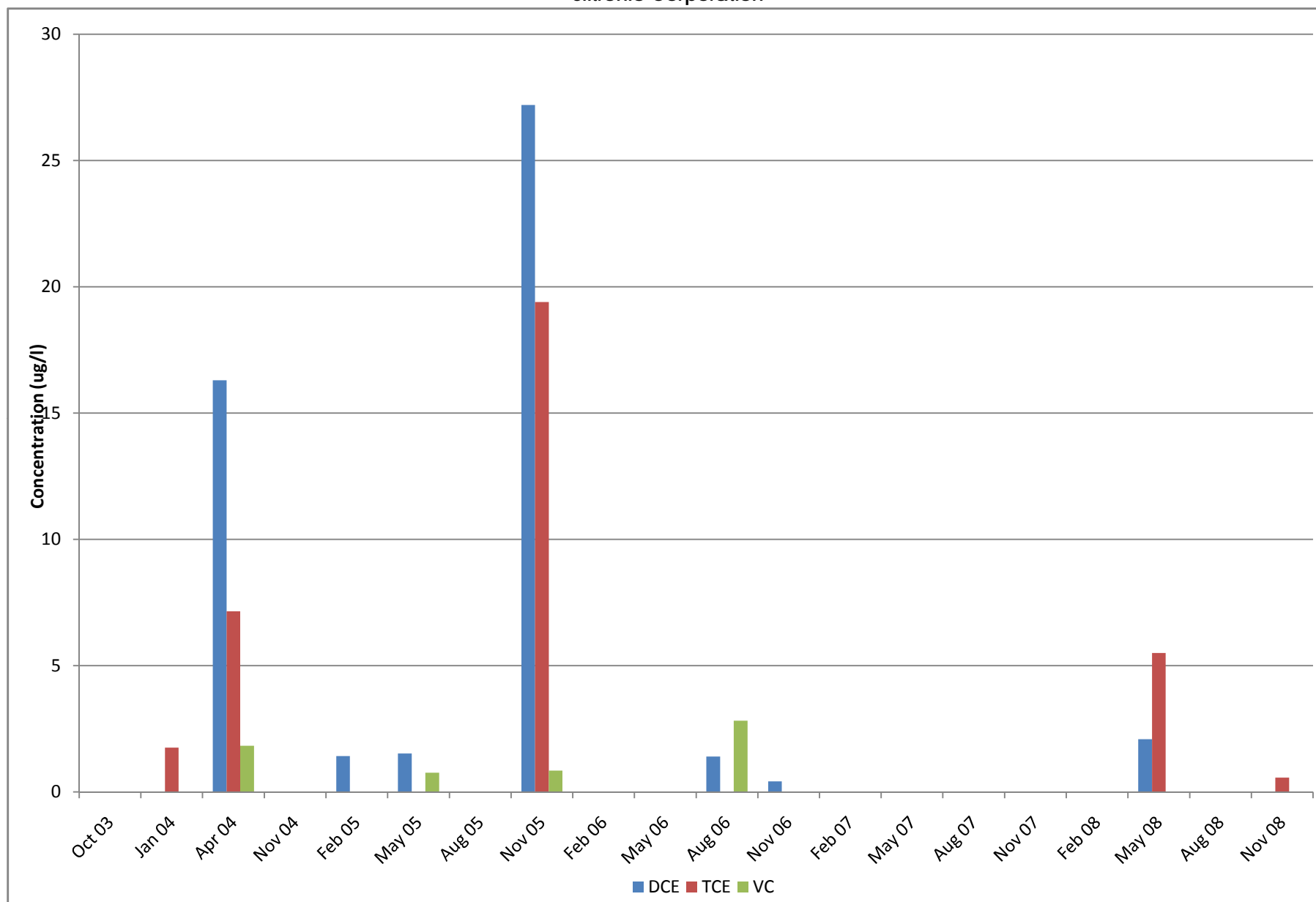




Figure 3 - WS11-161  
CVOCs in Groundwater  
Siltronic Corporation

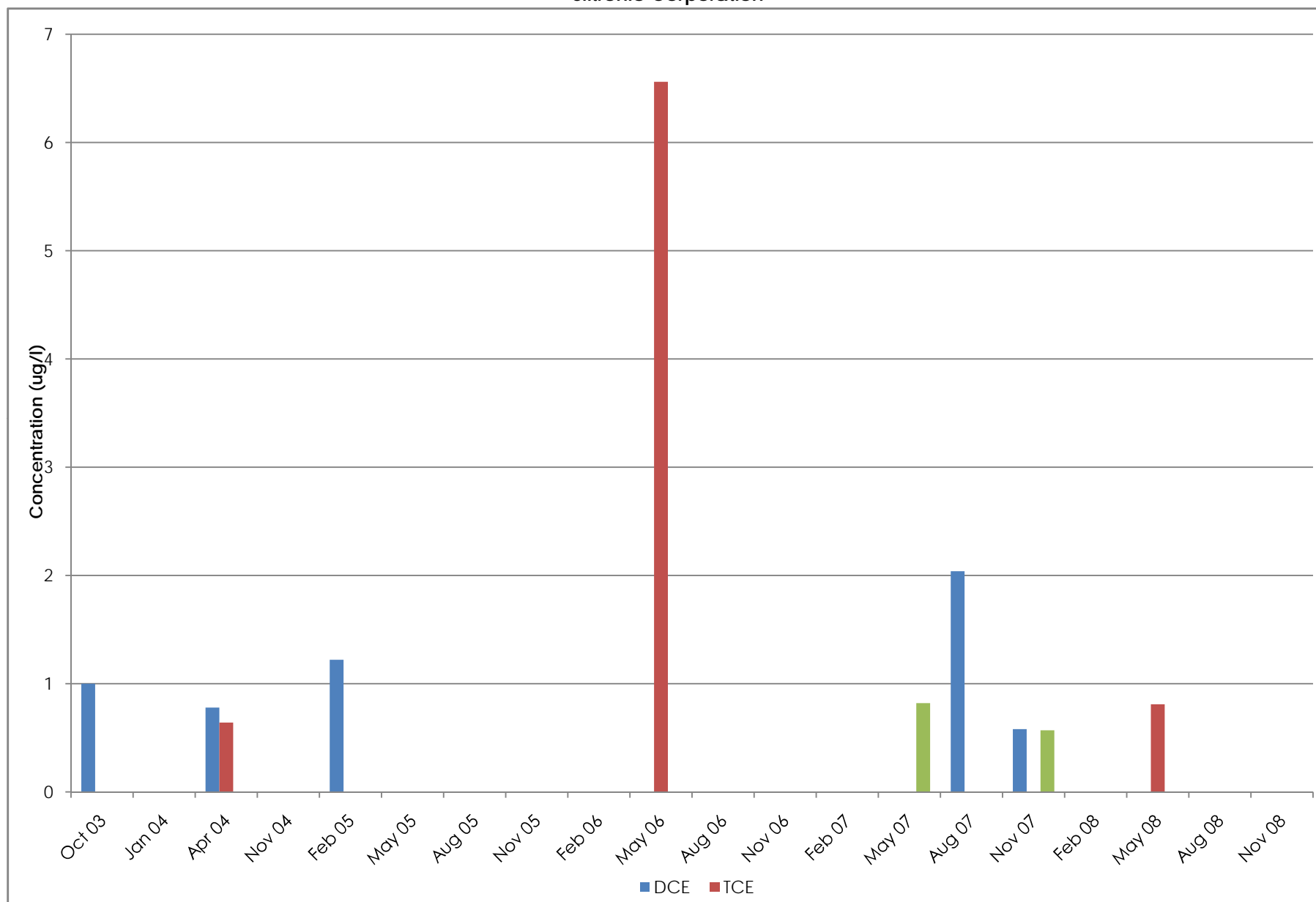


Figure 4 - WS12-161  
CVOCs in Groundwater  
Siltronic Corporation

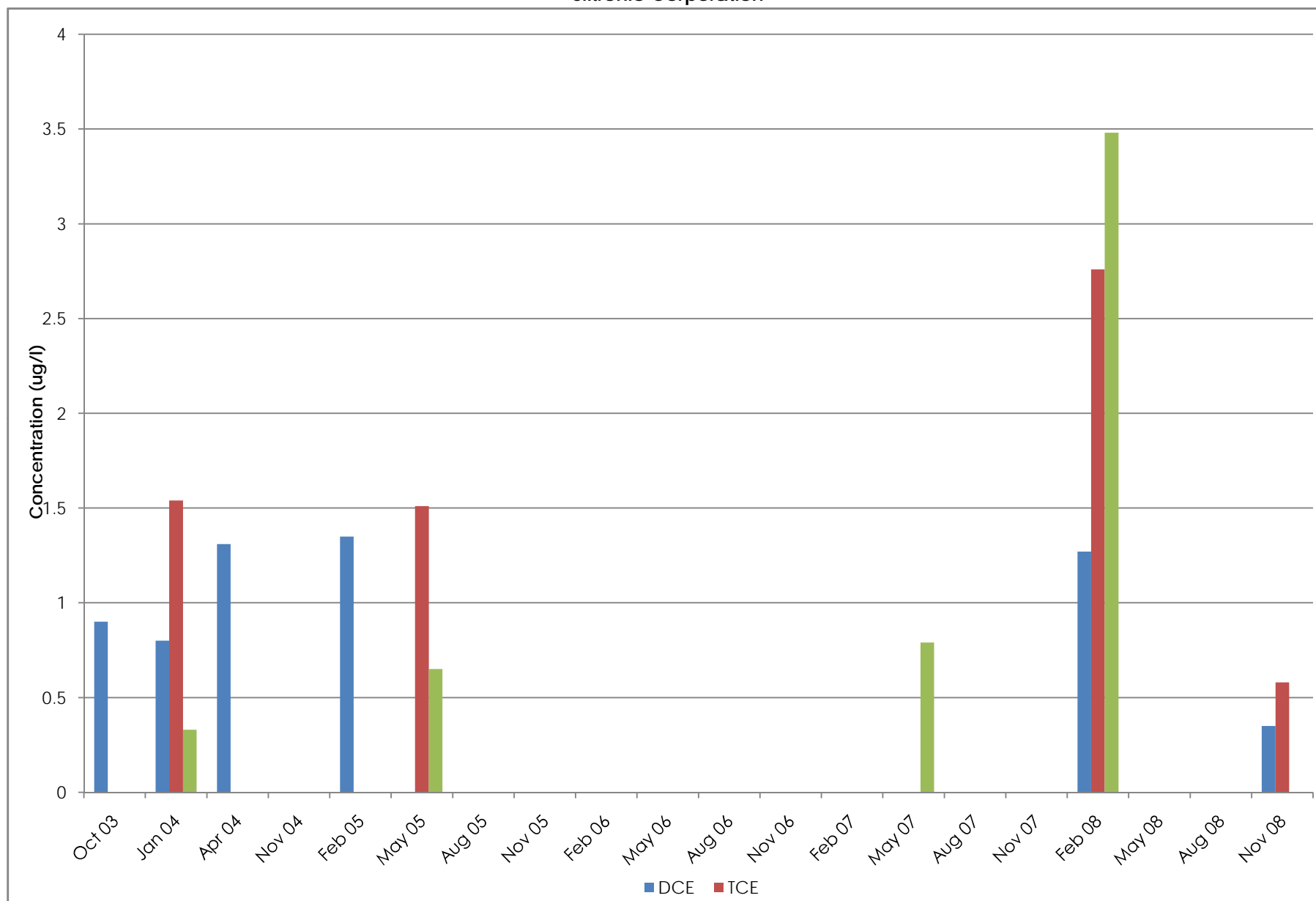


Figure 5 - WS14-161  
CVOCs in Groundwater  
Siltronic Corporation

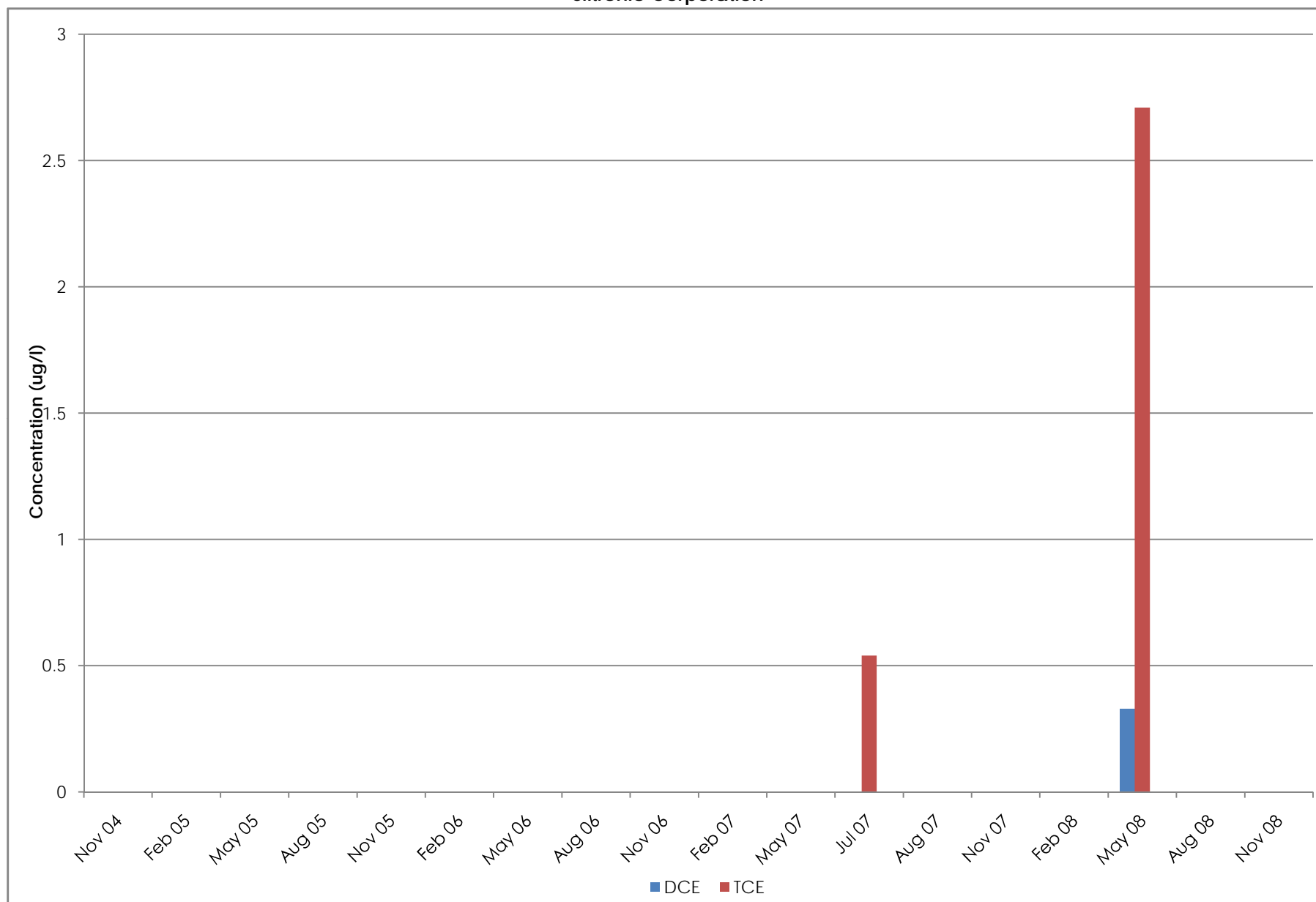


Figure 6 - WS15-140  
CVOCs in Groundwater  
Siltronic Corporation

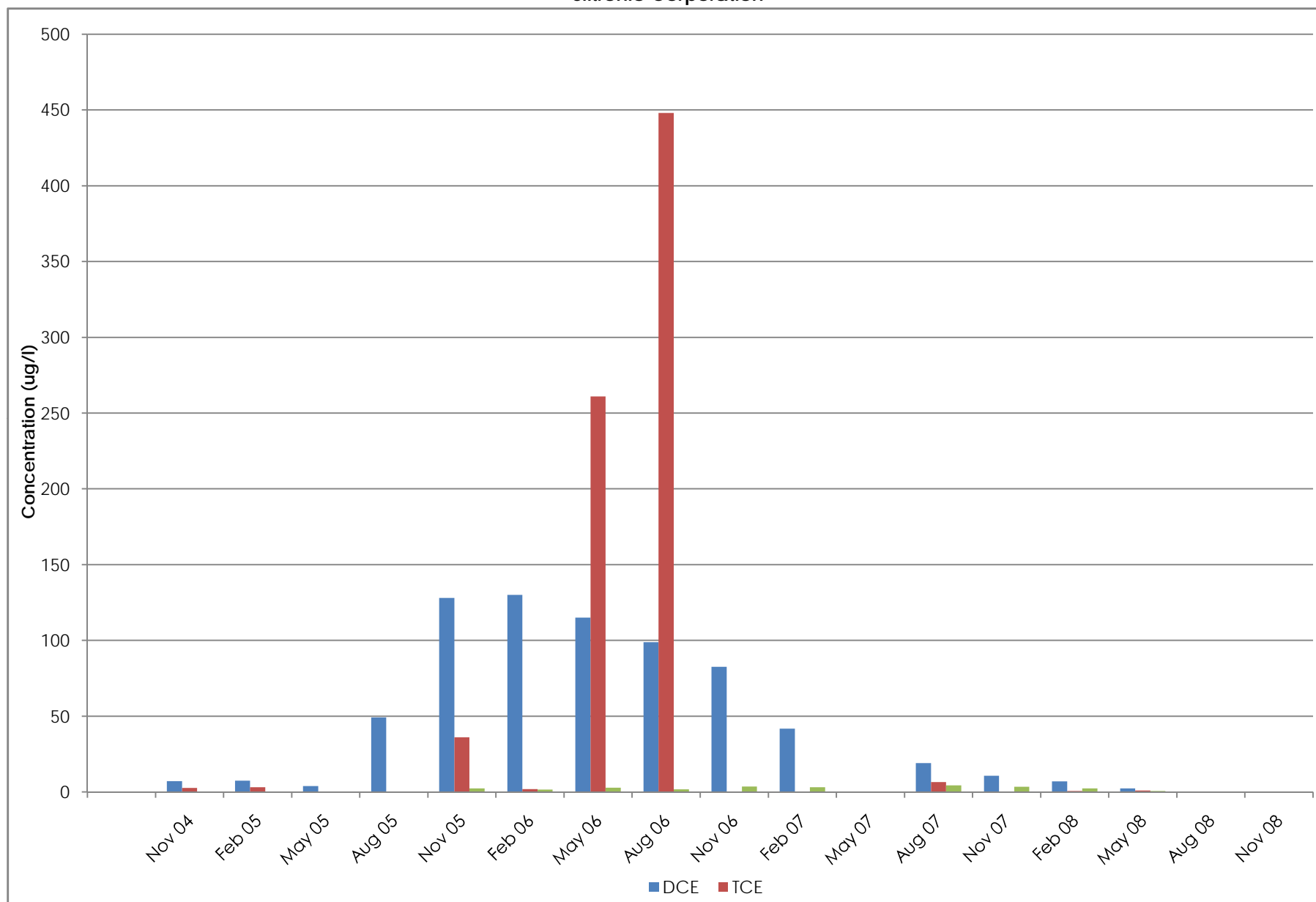


Figure 7 - WS16-125  
CVOCs in Groundwater  
Siltronic Corporation

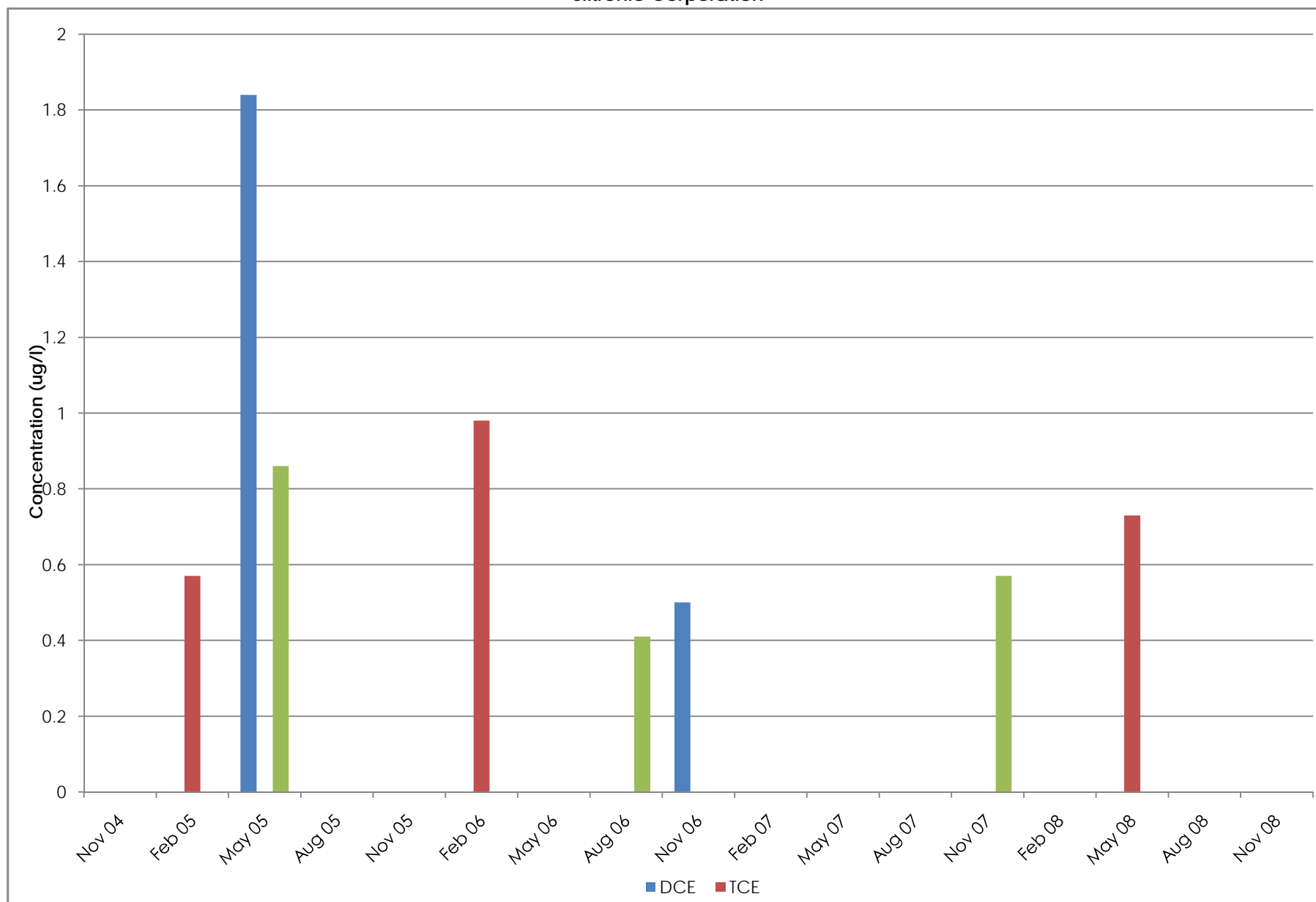




Figure 8 - WS16-161  
CVOCs in Groundwater  
Siltronic Corporation

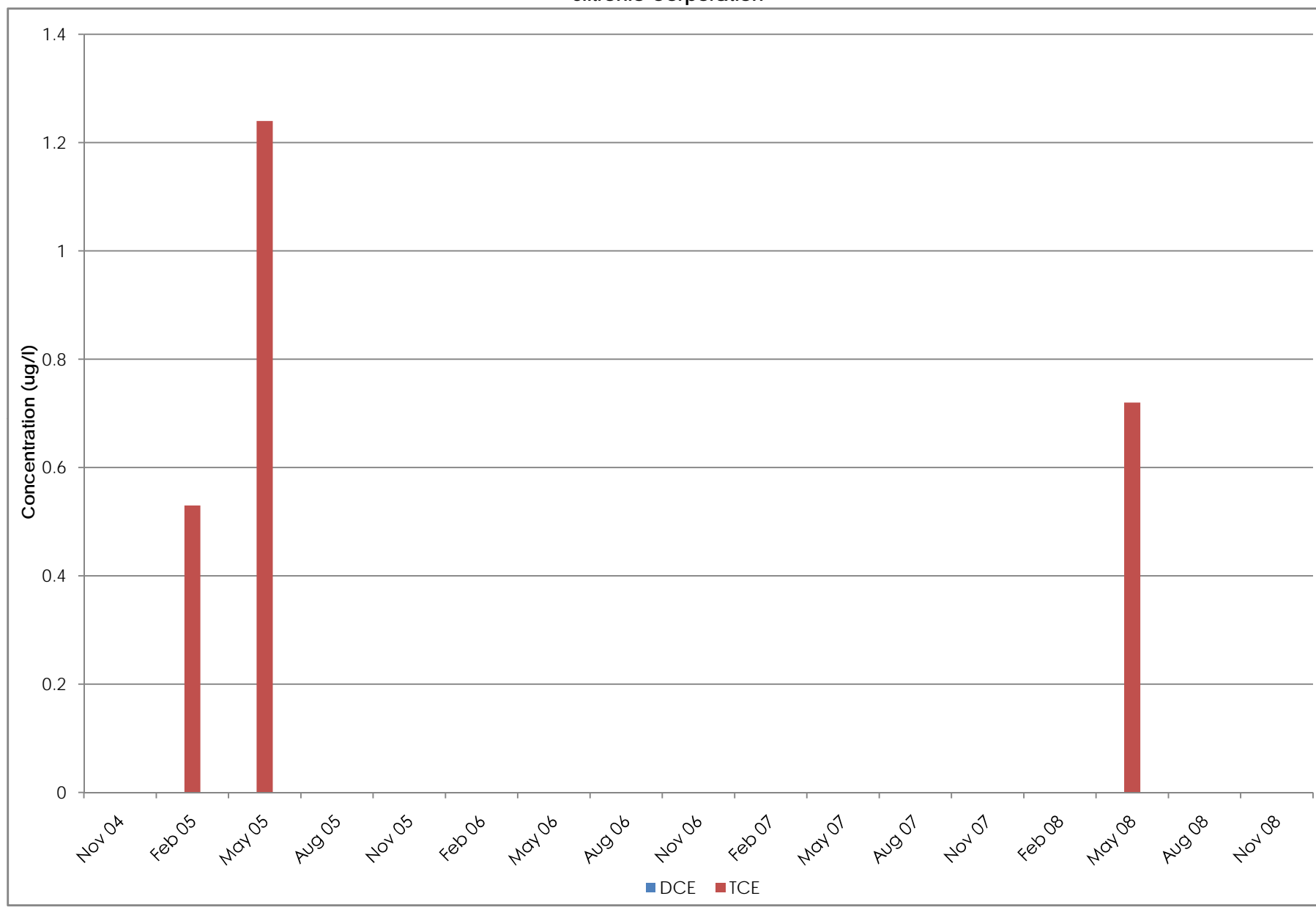


Figure 9 - WS17-52  
CVOCs in Groundwater  
Siltronic Corporation

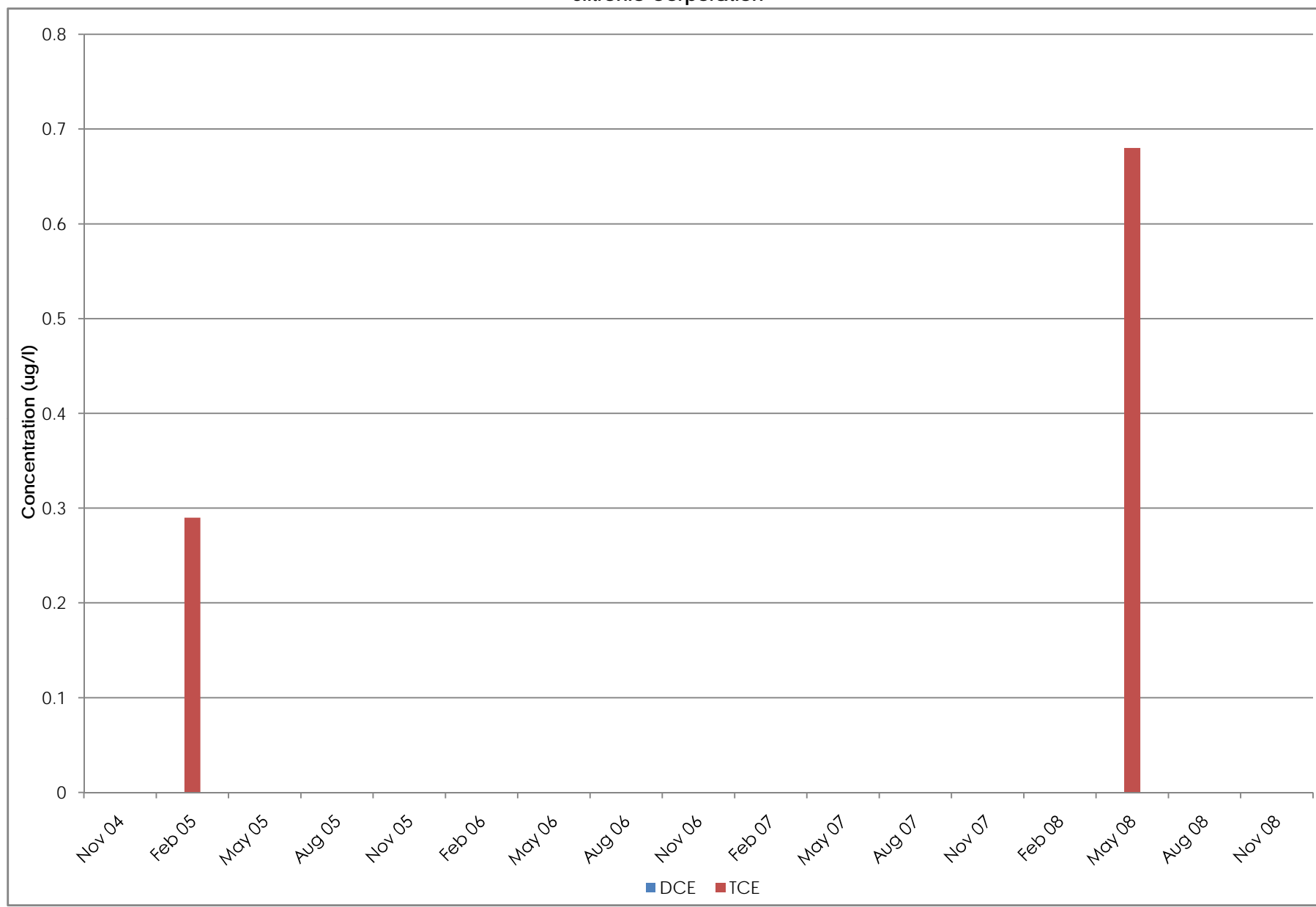
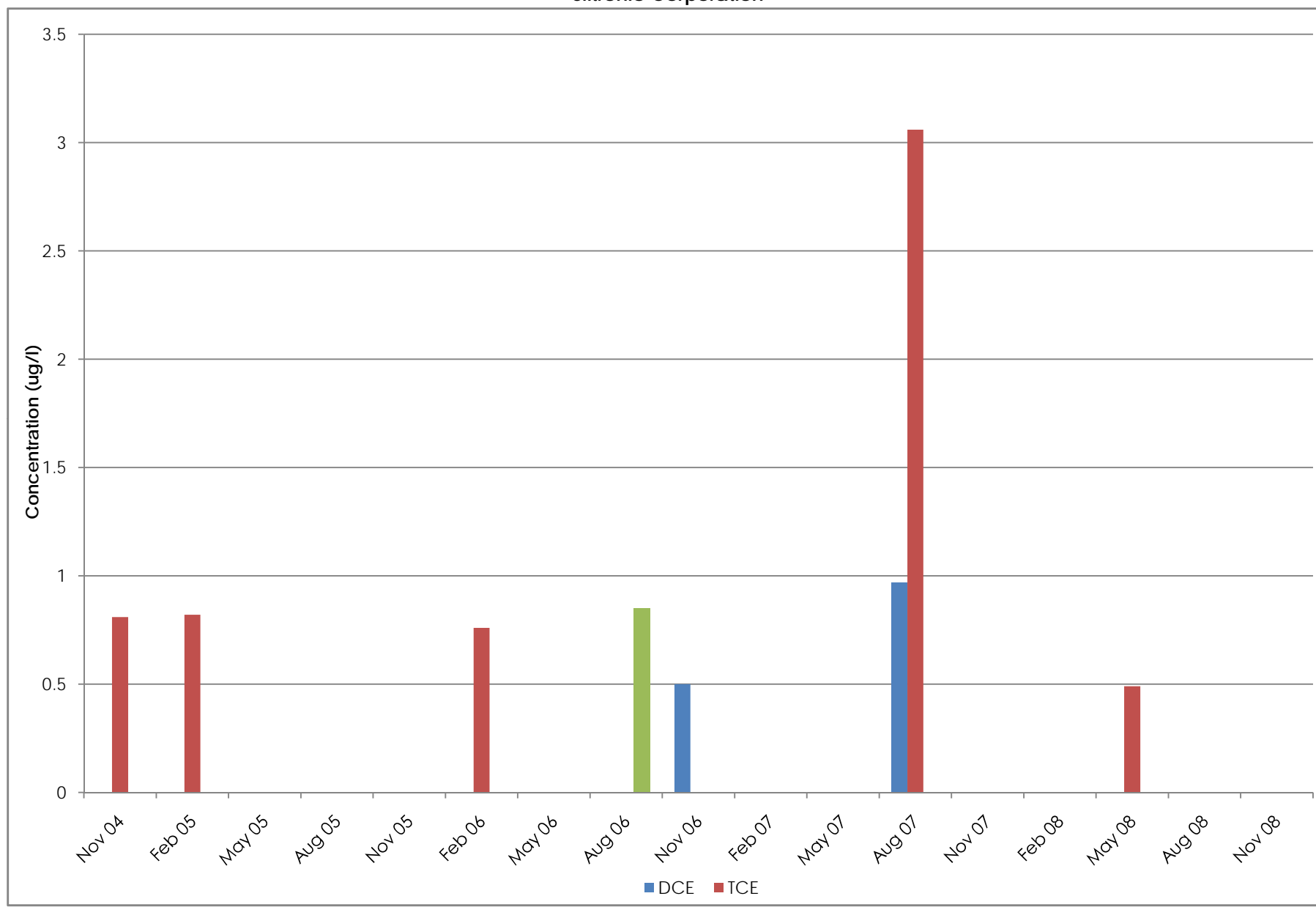


Figure 10 - WS17-94  
CVOCs in Groundwater  
Siltronic Corporation



# TABLES



**Table 1**  
**Well Completion and Detection Frequency Summary**  
**Proposed Discontinued Quarterly Monitoring Wells**  
**Siltronic Corporation**  
**Portland, Oregon**

Well ID	Screen Interval (feet below ground surface)	Location Relative to CVOC Plume	Sampling Events Completed	% Samples ND for TCE	% Samples ND for DCE	% Samples ND for VC	Most Recent Detection of any CVOC
WS-10-27	11-26	Upgradient	20	75%	65%	80%	Nov-08
WS-11-161	145-160	Below	20	85%	75%	90%	May-08
WS-12-161	145-160	Below	20	80%	70%	80%	Nov-08
WS-14-161	145-160	Below	18	89%	94%	100%	May-08
WS-15-140	125-140	Below	17	44%	17%	39%	May-08
WS-16-125	109-124	Cross gradient	17	82%	88%	82%	May-08
WS-16-161	145-160	Cross gradient	17	82%	100%	100%	May-08
WS-17-52	41-51	Upgradient	17	88%	100%	100%	May-08
WS-17-94	78-93	Upgradient	17	71%	88%	94%	May-08